

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>MR2833-39/PCT</b>	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. <b>PCT/US2004/005239</b>	International filing date ( <i>day/month/year</i> ) <b>17 March 2004 (17.03.2004)</b>	Priority date ( <i>day/month/year</i> ) <b>18 March 2003 (18.03.2003)</b>
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant <b>UNIVERSITY OF MARYLAND</b>		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).
2. This REPORT consists of a total of 4 sheets, including this cover sheet.  
  
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:
 

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application
4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 338 82 70	Date of issuance of this report <b>20 December 2006 (20.12.2006)</b>  Authorized officer  <div style="text-align: center; font-size: 1.2em;"><b>Nora Lindner</b></div> e-mail: pt02@wipo.int
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# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
MORTON J. ROSENBERG  
ROSENBERG, KLEIN & LEE  
3458 ELLICOTT CENTER DRIVE, SUITE 101  
ELLICOTT CITY, MD 21043

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference <b>MR2833-39-PCT</b>		Date of mailing (day/month/year) <b>06 DEC 2006</b>
International application No. <b>PCT/US04/05239</b>		FOR FURTHER ACTION See paragraph 2 below
International filing date (day/month/year) <b>17 March 2004 (17.03.2004)</b>	Priority date (day/month/year) <b>18 March 2003 (18.03.2003)</b>	
International Patent Classification (IPC) or both national classification and IPC <b>IPC: H03K 19/173( 2006.01) H03K 19/00( 2006.01)</b> <b>USPC: 326/38,47,93;398/164,47;709/204,203,205,242;715/751,752,753</b>		
Applicant <b>UNIVERSITY OF MARYLAND</b>		

1. This opinion contains indications relating to the following items:

- |                                     |              |  |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the opinion   |
| <input type="checkbox"/>            | Box No. II   | Priority   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited  |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application   |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application  |


### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion <b>21 June 2006 (21.06.2006)</b>	Authorized officer <i>Kidest Bahta</i>  Telephone No. (571) 272-3737
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Form PCT/ISA/237 (cover sheet) (April 2005)

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US04/05239

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/US04/05239

**Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**I. Statement**

Novelty (N)	Claims <u>NONE</u>	<u>YES</u>
	Claims <u>1-58</u>	<u>NO</u>
Inventive step (IS)	Claims <u>NONE</u>	<u>YES</u>
	Claims <u>1-58</u>	<u>NO</u>
Industrial applicability (IA)	Claims <u>1-58</u>	<u>YES</u>
	Claims <u>NONE</u>	<u>NO</u>

**2. Citations and explanations:**

Claims 1-58 lack novelty under PCT Article 33(2) as being anticipated by Salesky et al. (US 6,343,313).

Regarding claims 1-58, Salesky discloses all the claimed limitation in Abstract, Fig. Fig. 1, Fig. 5, Fig. 8B, Fig. 10B; i.e., shows that an improved networked computer communications system handles arbitrary streams of data, and transports at varying speeds those streams where intermediate updates can be dropped if they are obsolete by later arriving data updates, optimizing the utilization of network and node resources. Complex buffering by system server software allows distributed, parallel, or redundant processing, transmission, and storage for performance, reliability, and robustness. Various parameters of the system can be monitored, and the system can be reconfigured automatically based on the observations. Varied techniques reduce the perceived end-to-end latency and take advantage of software and hardware capabilities that assets connected to the system may possess. One conferencing system allows conference participants to share all or a portion of the display seen on their computer screens. The conferees may be at sites removed from each other, or may view a recorded presentation or archived conference at different times. Conference participants are either "presenters" who can modify the display or "attendees" who cannot modify the display. A pointer icon, which can be labeled to identify the conferee, is displayed on the shared image area. Each conferee can modify the position of his or her own pointer, even when not presenting, so that every participant can see what each conferee is pointing to, should a conferee choose to point to an element of the display. These and other features apply to other data streams shared in the conference or in meetings where there is no shared-image data stream).

Claims 1-58 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
30 September 2004 (30.09.2004)

PCT

(10) International Publication Number  
**WO 2004/083904 A3**

(51) International Patent Classification:  
**H03K 19/173** (2006.01) **H03K 19/00** (2006.01)

(21) International Application Number:  
PCT/US2004/005239

(22) International Filing Date: 17 March 2004 (17.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/455,654 18 March 2003 (18.03.2003) US

(71) Applicant (for all designated States except US): **UNIVERSITY OF MARYLAND** [US/US]; 6200 Baltimore Avenue, Riverdale, MD 20737 (US).

(72) Inventor; and

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(74) Agents: **ROSENBERG, Morton, J. et al.**; Rosenberg, Klein & Lee, 3458 Ellicott Center Drive, Suite 101, Ellicott City, MD 21043 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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**Declaration under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

**Published:**

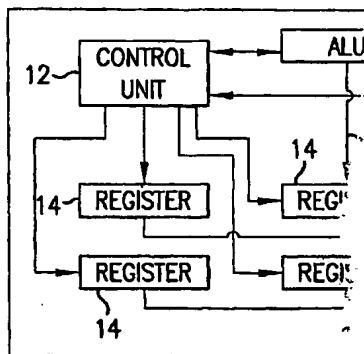
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— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
1 February 2007

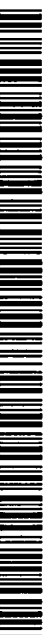
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appearing at the begin-  
izette.

(54) Title: OPTICAL INTERCONNECT STRUCTURE IN A COM



(57) Abstract: A multi-chip processor/memory arrangement (20) is shown which includes a plurality of modules (22), also referred to herein as chips. The modules (22) are interconnected there between by an optical interconnect structure (24) also referred to herein as optical interconnect fabric. The basic concept underlining the structure of the arrangement (20) is to position the processing elements and memory cells on the small chips (22) which are fabricated in mass production based on inexpensive technology, for example, 0.25 micron technology and interconnected with the optical interconnect fabric (24). Packaged with the optical interconnect structure (24), a plurality of inexpensive chips (22) provides sufficient performance but for a small fraction of the cost of the processor/memory argument implemented on a single large computer chips (0.065 micron chip).



WO 2004/083904 A3

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/05239

## A. CLASSIFICATION OF SUBJECT MATTER

IPC: H03K 19/173( 2006.01)  
H03K 19/00( 2006.01)

USPC: 326/38,47,93;372/141;398/164,47;709/204-205,242;715/751,752,753

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 326/38, 47, 93; 372/141; 398/164, 47; 709/204-205, 242; 715/751, 752, 753,

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,343,313 B1 (SALESKY et al.) 29 January 2002 (29.01.2002), Whole Document.	1-58
A	US 5,781,465 A (LUTA et al.) 24 July 1998 (24 July 1998), Whole Document.	1-58

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

21 June 2006 (21.06.2006)

Date of mailing of the international search report

06 DEC 2006

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